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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/073,608	02/11/2002	Vadakkedathu T. Rajan	YOR920020050	5945

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IBM CORPORATION  
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EXAMINER

DATSKOVSKIY, SERGEY

ART UNIT	PAPER NUMBER
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2121

DATE MAILED: 09/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/073,608	<b>Applicant(s)</b> RAJAN ET AL.	
	<b>Examiner</b> Sergey Datskovskiy	<b>Art Unit</b> 2121	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 February 2002.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                            | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |



### **DETAILED ACTION**

1. Claims 1-10 have been submitted for examination.
2. Claims 1-10 have been rejected.

### ***Specification***

3. The abstract of the disclosure is objected to because of use of legal phraseology "said" on line 15. Correction is required. See MPEP § 608.01(b).
4. The disclosure is objected to because of the following informalities: misspelled phrase "an property" in paragraph [0010].

Appropriate correction is required.

### ***Claim Objections***

5. Claims 1 and 6 are objected to because of the following informalities: misspelled phrase "an property" in claim 1, line 12, and claim 6, line 18. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. Claims 1-10 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

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7. The method claims 1-5 as presented do not claim a technological basis in the pre-amble and the body of the claim. Without a claimed basis, the claims may be interpreted in an alternative as involving no more than a manipulation of an abstract idea and therefore non-statutory under 35 U.S.C. §101. In contrast, a method claim that includes in the body of the claim, some structural / functional interrelationship which can only be computer implemented is considered to have a technological basis [See Ex parte Bowman, 61 USPQ2d 1669, 1671 (Bd. Pat. App. & Inter. 2001) - used only for content and reasoning since not precedential].

Claims 1-5 are directed toward a method of characterizing object during at least a partial run of a program. However, the preamble and the body of the claims do not indicate that a computer system executes the method. The program is not described as a program running on a computer, and the steps of determining characterization information, desired property, correlation between desired property and said characterization, and using said correlation, do not contain any evidence of using a computer.

In order to over come the 101 rejections above, the following preamble is suggested:

A computer implemented method for ---, or something similar.

Also, in the body of the claims include some structural / functional interrelationship which can only be computer implemented.

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8. Regardless of whether any of the claims are in the technological arts, none of them is limited to practical applications in the technological arts. Examiner finds that *In re Warmerdam*, 33 F.3d 1354, 31 USPQ2d 1754 (Fed. Cir. 1994) controls the 35 U.S.C. §101 issues on that point for reasons made clear by the Federal Circuit in *AT&T Corp. v. Excel Communications, Inc.*, 50 USPQ2d 1447 (Fed. Cir. 1999). Specifically, the Federal Circuit held that the act of:

...[T]aking several abstract ideas and manipulating them together adds nothing to the basic equation. *AT&T v. Excel* at 1453 quoting *In re Warmerdam*, 33 F.3d 1354, 1360 (Fed. Cir. 1994).

Examiner finds that Applicant's "objects", "properties" and "characterization" references are just such abstract ideas.

9. Examiner bases his position upon guidance provided by the Federal Circuit in *In re Warmerdam*, as interpreted by *AT&T v. Excel*. This set of precedents is within the same line of cases as the *Alappat-State Street Bank* decisions and is in complete agreement with those decisions. *Warmerdam* is consistent with *State Street's* holding that:

Today we hold that *the transformation of data, representing discrete dollar amounts, by a machine through a series of mathematical calculations into a final share price*, constitutes a practical application of a mathematical algorithm, formula, or calculation because it produces 'a useful, concrete and tangible result' -- *a final share price momentarily fixed for recording purposes and even accepted and relied upon by regulatory authorities and in subsequent trades.* (emphasis added) *State Street Bank* at 1601.

10. True enough, that case later eliminated the “business method exception” in order to show that business methods were not per se nonstatutory, but the court clearly *did not* go so far as to make business methods *per se statutory*. A plain reading of the excerpt above shows that the Court was *very specific* in its definition of the new *practical application*. It would have been much easier for the court to say that “business methods were per se statutory” than it was to define the practical application in the case as “...the transformation of data, representing discrete dollar amounts, by a machine through a series of mathematical calculations into a final share price...”

11. The court was being very specific.

12. Additionally, the court was also careful to specify that the “useful, concrete and tangible result” it found was “a final share price momentarily fixed for recording purposes and even accepted and relied upon by regulatory authorities and in subsequent trades.” (i.e. the trading activity is the further practical use of the real world monetary data beyond the transformation in the computer – i.e., “post-processing activity”.)

13. Applicant cites no such specific results to define a useful, concrete and tangible result. Neither does Applicant specify the associated practical application with the kind of specificity the Federal Circuit used.

14. Furthermore, in the case *In re Warmerdam*, the Federal Circuit held that:

...[T]he dispositive issue for assessing compliance with Section 101 in this case is whether the claim is for a process that goes beyond simply manipulating ‘abstract ideas’ or ‘natural phenomena’ ... As the Supreme Court has made clear, ‘[a]n idea of itself is not patentable, ... taking several abstract ideas and manipulating them together adds nothing to the basic equation.’ *In re Warmerdam* 31 USPQ2d at 1759 (emphasis added).

15. Since the Federal Circuit held in *Warmerdam* that this is the “dispositive issue” when it judged the usefulness, concreteness, and tangibility of the claim limitations in that case, Examiner in the present case views this holding as the dispositive issue for determining whether a claim is “useful, concrete, and tangible” in similar cases. Accordingly, the Examiner finds that Applicant manipulated a set of abstract “objects”, “properties” and “characterization” to solve purely algorithmic problems in the abstract (i.e., there is no indication of what *kind* of “objects” are used.) Clearly, a claim for characterizing “objects” is provably even more abstract (and thereby less limited in practical application) than pure “mathematical algorithms” which the Supreme Court has held are per se nonstatutory.

16. Since the claims are not limited to exclude such abstractions, the broadest reasonable interpretation of the claim limitations includes such abstractions. Therefore, the claims are impermissibly abstract under 35 U.S.C. §101 doctrine.

17. Since *Warmerdam* is within the *Alappat-State Street Bank* line of cases, it takes the same view of “useful, concrete, and tangible” the Federal Circuit applied in *State Street Bank*. Therefore, under *State Street Bank*, this could not be a “useful, concrete and tangible result”. There is only manipulation of abstract ideas.

18. The Federal Circuit validated the use of *Warmerdam* in its more recent *AT&T Corp. v. Excel Communications, Inc.* decision. The Court reminded us that:

Finally, the decision in *In re Warmerdam*, 33 F.3d 1354, 31 USPQ2d 1754 (Fed. Cir. 1994) is not to the contrary. \*\*\* The court found that the claimed process did nothing more than manipulate basic mathematical constructs and concluded that ‘taking several abstract ideas and manipulating them together adds nothing to the basic equation’;

hence, the court held that the claims were properly rejected under §101 ... Whether one agrees with the court's conclusion on the facts, the holding of the case is a straightforward application of the basic principle that mere laws of nature, natural phenomena, and abstract ideas are not within the categories of inventions or discoveries that may be patented under §101. (emphasis added) *AT&T Corp. v. Excel Communications, Inc.*, 50 USPQ2d 1447, 1453 (Fed. Cir. 1999).

19. Remember that in *In re Warmerdam*, the Court said that this was the dispositive issue to be considered. In the *AT&T* decision cited above, the Court reaffirms that this is the issue for assessing the “useful, concrete, and tangible” nature of a set of claims under 101 doctrine. Accordingly, Examiner views the *Warmerdam* holding as the dispositive issue in this analogous case.

20. The fact that the invention is merely the manipulation of *abstract ideas* is clear. The data referred to by Applicant's phrases “objects”, “properties”, and “characterization” is simply an abstract construct that does not provide limitations in the claims to the transformation of real world data (such as monetary data or heart rhythm data) by some disclosed process. Consequently, the necessary conclusion under *AT&T*, *State Street* and *Warmerdam*, is straightforward and clear. The claims take several abstract ideas (i.e., “objects”, “properties” and “characterization”) and manipulate them together adding nothing to the basic equation. Claims 1-10 are, thereby, rejected under 35 U.S.C. §101.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the



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art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

21. Claims 1-10 are rejected under 35 USC 112, first paragraph because current case law (and accordingly, the MPEP) require such a rejection if a 101 rejection is given because when Applicant has not in fact disclosed the practical application for the invention, as a matter of law there is no way Applicant could have disclosed how to practice the undisclosed practical application. This is how the MPEP puts it:

("The how to use prong of section 112 incorporates as a matter of law the requirement of 35 U.S.C. 101 that the specification disclose as a matter of fact a practical utility for the invention. ... If the application fails as a matter of fact to satisfy 35 U.S.C. § 101, then the application also fails as a matter of law to enable one of ordinary skill in the art to use the invention under 35 U.S.C. § 112."; In re Kirk, 376 F.2d 936, 942, 153 USPQ 48, 53 (CCPA 1967) ("Necessarily, compliance with § 112 requires a description of how to use presently useful inventions, otherwise an applicant would anomalously be required to teach how to use a useless invention."). See, MPEP 2107.01(IV), quoting In re Kirk (emphasis added).

22. Claims 2 and 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 2 and 7 recites the limitation "the determining of an initial property in step (b)" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim. Step (b) of claims 1 and 6 does not contain "determining of an initial property", instead it performs "determining a desirable property.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

23. Claims 1-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Clawson (US Patent No. 6,112,304).

**Claim 1**

Clawson teaches a method of characterizing objects generated during at least a partial run of a program, each object being characterized by a plurality of alternative properties which can be selected (col. 4, lines 25-34. Objects are disclosed as denizen processes, selectable alternative property is disclosed as location), said method comprising:

a) instrumenting said at least partial run of said program to determine characterization information about each of said objects (disclosed by a configuration portion, see col. 7, lines 29-41);

b) determining a desirable property for said objects (col. 4, lines 28-34; col. 11, lines 40-47);

c) determining a correlation between said desirable property and said characterization information for each of said objects (col. 11, lines 48-54);

d) using said correlation to select an property for an object subsequently created during an at least partial run of said program based upon characterization information about the subsequently created object (col. 13, lines 24-29; col. 14, lines 2-6. Since a denizen can spawn an identical or partially identical offspring, the same correlation takes place, selecting a location for the new process based on its configuration).

## **Claim 2**

Clawson teaches a method as set forth in claim 1, wherein the determining of an initial property in step (b) is carried out by minimizing total cost of interaction among components during at least a partial run of said program (disclosed invention is targeted to optimize performance, see col. 27, lines 20-25, for example, optimizing database queries, see col. 26, lines 31-33. Such optimization implies a minimization of total cost of interaction as it results in performing fewer computational operations).

## **Claim 3**

Clawson teaches a method as set forth in claim 1, wherein said characterization information of an object comprises at least one of said object's class, classification of said object's creator object, and a code identification of said object's creation site (col. 7, lines 35-41, a code of said object's creation site is disclosed as an ocean identifier. See also col. 8, lines 59-61, disclosing an inclusion of classification information).

**Claim 4**

Clawson teaches a method as set forth in claim 1, wherein said alternative properties comprise a string representation selected from ASCII, EBCDIC, and UNICODE (col. 20, lines 25-26, lines 38-42).

**Claim 5**

Clawson teaches a method as set forth in claim 1, wherein said alternative properties comprise a data structure selected from hash table, tree, and compressed data structures (col. 15, lines 30-33; See also compressed data disclosed at col. 16, lines 50-59).

**Claim 6**

Clawson teaches a computer readable medium including computer instructions executable on a computer (col. 27, lines 32-45) for carrying out a method of characterizing objects generated during at least a partial run of a program, each object being characterized by a plurality of alternative properties which can be selected (col. 4, lines 25-34. Objects are disclosed as denizen processes, selectable alternative property is disclosed as location), said method comprising:

a) instrumenting said at least partial run of said program to determine characterization information about each of said objects (disclosed by a configuration portion, see col. 7, lines 29-41);

b) determining a desirable property for each of said objects (col. 4, lines 28-34; col. 11, lines 40-47);

c) determining a correlation between said desirable property and said characterization information for each of said objects (col. 11, lines 48-54);

d) using said correlation to select an property for an object subsequently created during an at least partial run of said program based upon characterization information about the subsequently created object (col. 13, lines 24-29; col. 14, lines 2-6. Since a denizen can spawn an identical or partially identical offspring, the same correlation takes place, selecting a location for the new process based on its configuration).

#### **Claim 7**

Clawson teaches a computer readable medium as set forth in claim 6, wherein the determining of an initial property in step (b) is carried out by minimizing total cost of interaction among components during at least a partial run of said program (disclosed invention is targeted to optimize performance, see col. 27, lines 20-25, for example, optimizing database queries, see col. 26, lines 31-33. Such optimization implies a minimization of total cost of interaction as it results in performing fewer computational operations).

#### **Claim 8**

Clawson teaches a computer readable medium as set forth in claim 6, wherein said characterization information of an object comprises at least one of said object's

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class, classification of said object's creator object, and a code identification of said object's creation site (col. 7, lines 35-41, a code of said object's creation site is disclosed as an ocean identifier. See also col. 8, lines 59-61, disclosing an inclusion of classification information).

**Claim 9**

Clawson teaches a computer readable medium as set forth in claim 6, wherein said alternative properties comprise a string representation selected from ASCII, EBCDIC, and UNICODE (col. 20, lines 25-26, lines 38-42).

**Claim 10**

Clawson teaches a computer readable medium as set forth in claim 6, wherein said alternative properties comprise a data structure selected from hash table, tree, and compressed data structures (col. 15, lines 30-33; See also compressed data disclosed at col. 16, lines 50-59).

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Joy (US Patent No. 5,761,670) teaches a system and method for space efficient object locking using global and local locks. Schwartz et al. (US Patent No. 5,911,144) teaches a method and apparatus for optimizing the assignment of hash values to nodes residing in a garbage collected heap. Motoyama et al. (US Patent No.

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6,085,196) teaches an object-oriented system and computer program product for mapping structured information to different structured information. Joy (US Patent No. 6,233,621) teaches a system and method for space efficient hash code allocation. Hunt (US Patent No. 6,381,735) teaches a dynamic classification of sections of software. Hunt (US Patent No. 6,629,123) teaches an interception of unit creation requests by an automatic distributed partitioning system.

#### **Contact Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sergey Datskovskiy whose telephone number is (571) 272-8188. The examiner can normally be reached on Monday-Friday from 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Knight, can be reached on (571) 272-3687. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

S.D.

Assistant examiner

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A handwritten signature in black ink, appearing to read 'Anthony Knight', is positioned above the printed name.

Anthony Knight

Supervisory Patent Examiner

Technology Center 2100